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PROACTIVE CRISIS MANAGEMENT IN CORPORATE SYSTEMS

Nowadays a problem of preventing the forming of financial crises and bankruptcy as an extreme degree of crisis on corporate enterprises becomes one of the most important problems. Special attention of it should be paid by Ukrainian corporations, which consist more than 65% of domestic economy and which face deep financial troubles after the consequences of several local and global financial crises. Recently a large number of cases of bankruptcy and liquidation of corporate enterprises was carried out in Ukraine. And in addition, approximately every second domestic company operates at a loss that could lead to their bankruptcy in the future. That is why the implementation of proactive anti-crisis management in corporate systems of Ukraine in order to timely assess the threat of crisis forming and to prevent it is an urgent task for corporate management and government. Moreover, proactive management involves the use of advanced technologies, among which modern technologies of economic and mathematical modelling are of particular importance, which allow to adequately assess the threat of forming of financial crises at corporate enterprises both in the current and future periods and to determine how much this threat of crisis affects financial stability and the threat of bankruptcy of the corporation as a whole.

The development of econometric models of estimation of the threat of bankruptcy and researches about general problems of crisis management were started only in the second half of the 20th century. It was proved [6] that an effective tool for evaluating the threat of bankruptcy is econometric modelling. There is quite a large number of implemented models, which were generally used successfully for some period, among them there are models of Altman, Beaver, Taffler, Fulmer, Kadykov, Matviychuk, Cherniak, Tereshchenko etc. [1, 3, 4, 6]. However, most of them are unfit to Ukrainian realities, moreover, at the moment there are very few of researches about the formation of set of models about estimation the influence of forming of financial crises in companies that are the parts of corporations, on bankruptcy of corporations as a whole. Usually the objects of research are individual enterprises that are segment of small and medium enterprises or corporate enterprises, but excluding their subsidiaries.

The financial system of any corporate enterprise has a subsystem of crisis management. In modern conditions of uncertainty and risks the task of crisis management is not only about prevention the crisis, but also about the early indication of this bifurcation point, about forecasting, which would prevent irreversible negative changes and about reaching a new level of development with minimal negative effects. So, now the main direction of modern improvement of crisis management in corporate systems is the technology of proactive management.

Functioning of the subsystem of proactive crisis management (PACM) should rely on the basis of a new complex approach, which, using the methods of economic-mathematical modeling, would allow to identify those factors that affect the threat of financial crises in subsidiaries and parent corporations, as well as to predict their future value for assessing the financial condition of enterprises in subsequent periods. The goal of implementing proactive anti-crisis management is not only to quit rapidly from the current crisis, but also to timely diagnose the future crises and to prevent them. Recommended for implementation into PACM approach is shown on Fig. 1 [5].

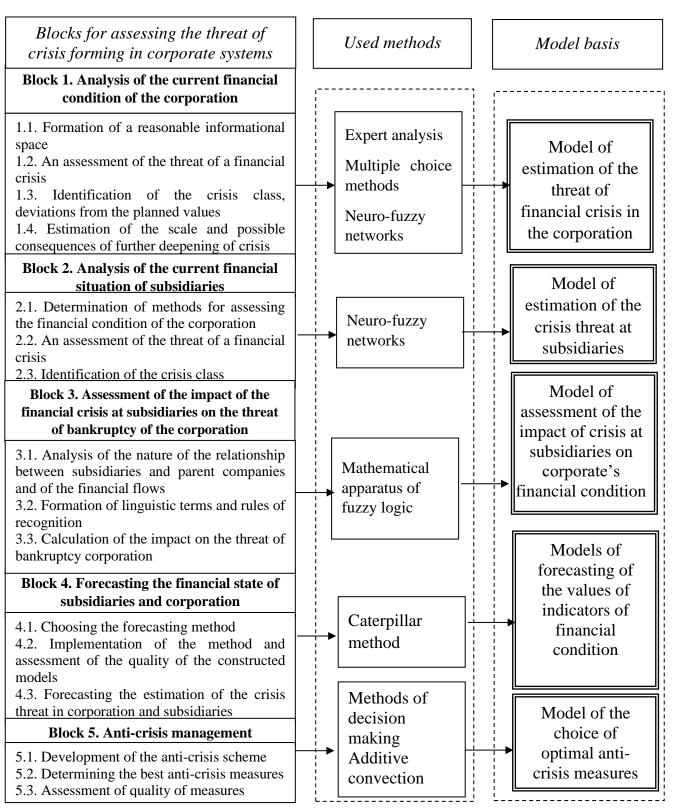| Blocks for assessing the threat of crisis forming in corporate systems	Used methods	Model basis
Block 1. Analysis of the current financial condition of the corporation	Expert analysis Multiple choice methods Neuro-fuzzy networks	Model of estimation of the threat of financial crisis in the corporation
1.1. Formation of a reasonable informational space 1.2. An assessment of the threat of a financial crisis 1.3. Identification of the crisis class, deviations from the planned values 1.4. Estimation of the scale and possible consequences of further deepening of crisis		
Block 2. Analysis of the current financial situation of subsidiaries	Neuro-fuzzy networks	Model of estimation of the crisis threat at subsidiaries
2.1. Determination of methods for assessing the financial condition of the corporation 2.2. An assessment of the threat of a financial crisis 2.3. Identification of the crisis class		
Block 3. Assessment of the impact of the financial crisis at subsidiaries on the threat of bankruptcy of the corporation	Mathematical apparatus of fuzzy logic	Model of assessment of the impact of crisis at subsidiaries on corporate's financial condition
3.1. Analysis of the nature of the relationship between subsidiaries and parent companies and of the financial flows 3.2. Formation of linguistic terms and rules of recognition 3.3. Calculation of the impact on the threat of bankruptcy corporation		
Block 4. Forecasting the financial state of subsidiaries and corporation	Caterpillar method	Models of forecasting of the values of indicators of financial condition
4.1. Choosing the forecasting method 4.2. Implementation of the method and assessment of the quality of the constructed models 4.3. Forecasting the estimation of the crisis threat in corporation and subsidiaries		
Block 5. Anti-crisis management	Methods of decision making Additive convection	Model of the choice of optimal anti-crisis measures
5.1. Development of the anti-crisis scheme 5.2. Determining the best anti-crisis measures 5.3. Assessment of quality of measures		

Fig. 1. Methodology of modelling of estimation of the crisis threat in corporate systems

The feature of the subsystem of proactive crisis management (PACM) in comparison with the usual subsystem of crisis management in the enterprise

(including corporate type) is the detection of "signals" that can lead to negative phenomena, during monitoring and comprehensive diagnosis of financial condition. And the special place is taken by the problem of clear identification of the weak signal precisely as a signal of a threatening the stable existence of the enterprise [2]. The main criterion for identifying a signal is the threat of bankruptcy at the enterprise. The task is to trace the process of transition from a weak signal to a strong, to identify the rules of such transition through the characteristic features of the dynamics of indicators describing the parameters of the external and internal environment of the corporate enterprise. At the same time, the implementation and operation of PACM in an enterprise requires appropriate organizational, socio-psychological and informational and methodological support.

This approach (fig. 1) consists of 5 blocks: 1) analysis of the current financial condition of the corporation; 2) analysis of current financial condition of subsidiaries; 3) assessment of the impact of financial crisis on the subsidiary to the threat of bankruptcy of the corporation; 4) forecasting the threat of crisis; 5) crisis management. Blocks 1-4 of the above scheme are the blocks of the implementation of proactive crisis management in the corporation, aimed at preventing the emergence of the crisis situation in the corporate system in general and in its elements in particular in the future. Block 5 is realized at the current assessment of the state of the corporation, it is a "response" to already existing negative processes and phenomena in the corporation. After its implementation, only proactive control units should be used, which will prevent the onset of financial crises in the enterprises of the corporate system.

With technological, innovative progress in recent years, more attention is paid to methods of artificial intelligence. Thus, using developed software packages recently researchers use neural networks for crises threat assessment in enterprises, the accuracy of which is higher than of other methods [1, 4, 6]. And, regarding the

results of previous studies [4-5], we can conclude that in the present conditions of uncertainty and risks as a tool for modelling the estimation of the threat of financial crises forming for corporations it would be best to use a method based on the use of neural networks and mathematical fuzzy logic. Because this method combines the most positive signs used in other methods and its application coincides with the essence of the implementation of proactive crisis management in the corporation.

In the proposed approach there are such methods recommended for use as econometric methods, complex of methods of decision theory and modern economic and mathematical methods, such as neural fuzzy modelling and forecasting method "caterpillar". Its use will allow implementing the technology of proactive crisis management in the activities of corporations, analyzing the financial condition of both the subsidiary and the entire corporation adequately, assessing the impact of financial crisis on the subsidiaries to the threat of bankruptcy of the whole organization and implementing the necessary range of measures for its prevention.

The developed on the base of proactive technology approach was implemented in Ukrainian agricultural corporations. Decreasing the possible losses of crises consequences, it showed its effectiveness and advisability for future use by corporate financial and TOP-management.

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